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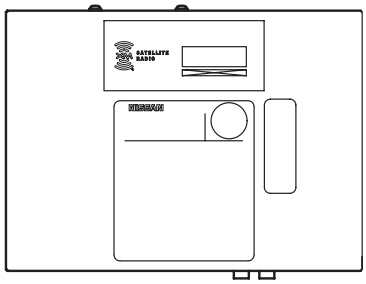
Service Manual



NISSAN Automobile Genuine
Satellite Tuner

Model EN-1187E

After Serial No.0027925
(Genuine No.28051 CR900)

ORIGINAL SERVICE MANUAL

After Serial No.0027925 of this model, please confirm that and correspond to the original manual.
This additional service manual is designed to be used together with Original model.

Original model	Manual No.
EN-1187E-A	298-6023-00

DIFFERENCE FROM ORIGINAL MODEL

1. Change of the System Controller IC
2. Additional of the deatails of IC explanation
3. Additional of the Label(Software version code)
4. Change of the components

NOTES

* We cannot supply PWB with component parts in principle. When a circuit on PWB has failure, please repair it by component parts base. Parts which are not mentioned in service manual are not supplied.
* Specifications and design are subject to change without notice for further improvement.

COMPONENTS

EN-1187E-A

1.	Main unit	----------	1
2.	Clamp	321-1026-00	4
3.	Parts bag	----------	
3-1.	Edge protector	345-5247-00	1
3-2.	Seal rubber	345-5252-00	2
3-3.	Urethane sheet	345-7010-00	14
3-4.	Spacer	345-8276-00	1
3-5.	Magic tape	348-0105-02	2
3-6.	Magic tape	348-0106-02	2
3-7.	Protect seal	348-0333-00	4
4.	Parts bag	----------	
4-1.	Mounting bracket	300-7362-03	2
4-2.	Tap screw	704-5010-81	4
4-3.	D-sems-hex-bolt	734-4008-31	4
4-4.	Hex flange bolt	782-6016-00	1
5.	Parts bag	----------	
5-1.	Insulok tie	335-3847-00	4
5-2.	Corrugate tube	825-1179-01	1
5-3.	Bonding wire	840-0539-00	1
6.	Parts bag	----------	
6-1.	Black tape	348-0334-00	2

To engineers in charge of repair or inspection of our products.

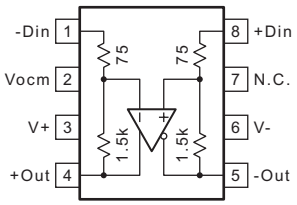
Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

1. Use specified parts.
   The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them.
   The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.
2. Place the parts and wiring back in their original positions after replacement or re-wiring.
   For proper circuit construction, use of insulation tubes, bonding,gaps to PWB, etc, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection.
   If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.

3. Check for safety after repair.
   Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary ploblems around the repaired spots.
   If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.
4. Caution in removal and making wiring connection to the parts for the automobile.
   Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.
5. Cautions regarding chips.
   Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc). The negative pole of tantalum capacitors is highly susceptible to heat, so use special care when replacing them and check the operation afterwards.
6. Cautions in handling flexible PWB
   Before working with a soldering iron, make sure that the iron tip temperature is around 270℃. Take care not to apply the iron tip repeatedly(more than three times)to the same patterns. Also take care not to apply the tip with force.
7. Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

EXPLANATION OF IC

051-4611-90 AD8131ARM High-Speed Differential Driver



051-6390-00 STA400 CHANNEL DECODER

DESCRIPTION

STA400 Channel Decoder integrates all the functions to demodulate and decode the incoming satellite and terrestrial signals after the RF Front-End down-convertion:

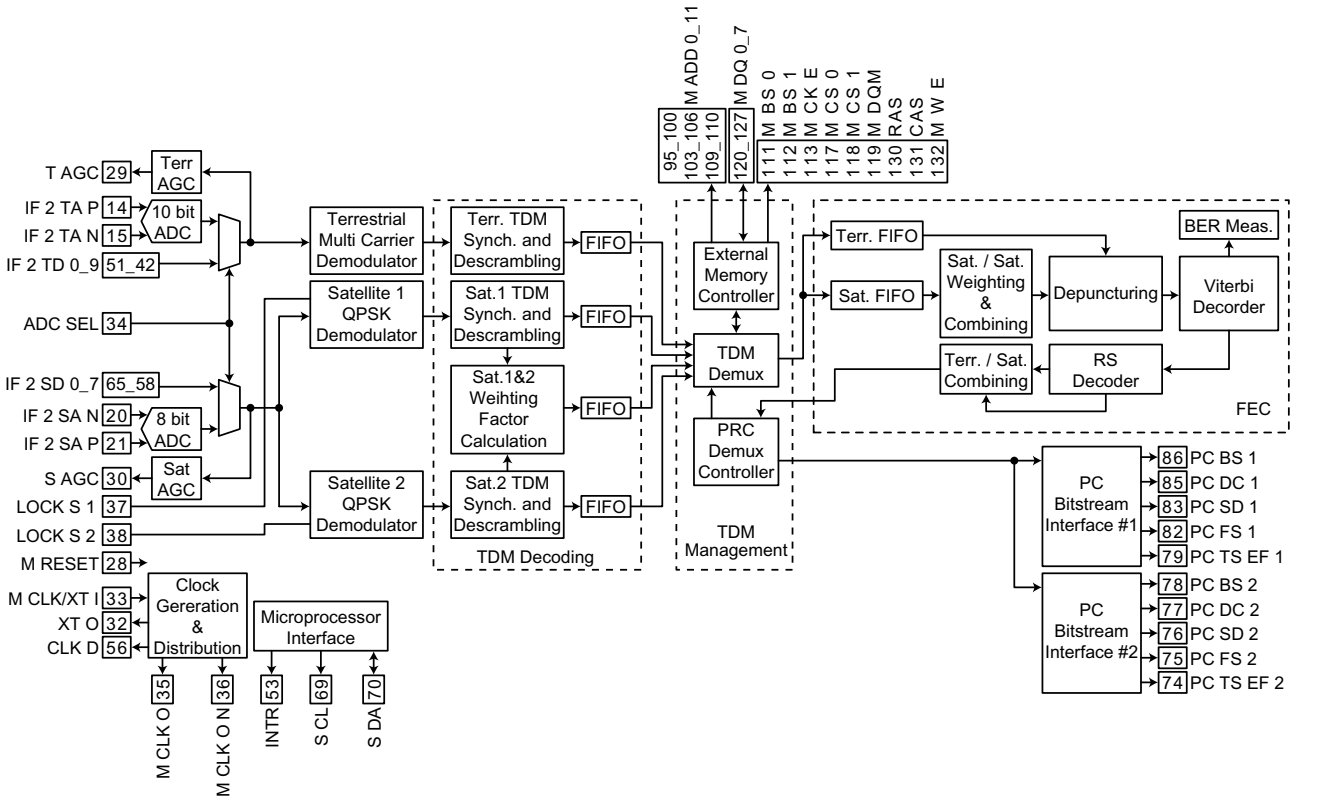
. Analog-to-Digital conversions
. Satellite and terrestrial demodulation
. AGC
. Frame synchronization and demultiplexing
. Viterbi decoding
. Time and spatial diversity combining
. Reed-Solomon decoding and deinterleaving
. Prime Rate Channel (PRC) demultiplexing
. Payload Channel (PC) selection

At the end of the demodulation and decoding processes a configurable serial data stream is made available to STA450, the Service/Source Decoder, via the PC Bitstream interface.

Terminal Description

pin 1: F TEST OUT 10: O : Configurable Functional Test Output
pin 2: F TEST OUT 11: O : Configurable Functional Test Output
pin 3: F TEST OUT 12: O : Configurable Functional Test Output
pin 4: F TEST OUT 13: O : Configurable Functional Test Output
pin 5: F TEST OUT 14: O : Configurable Functional Test Output
pin 6: F TEST OUT 15: O : Configurable Functional Test Output
pin 7: VDD : - : 2.5V Positive Supply Voltage
pin 8: VDD 3 : - : 3.3V Positive Supply Voltage
pin 9: VSS : - : Digital Ground
pin 10: Tref M : - : Terrestrial ADC Reference Negative Voltage
pin 11: Tref P : - : Terrestrial ADC Reference Positive Voltage
pin 12: T ADCref : - : Analog terminal. Terrestrial ADC Reference Adjust (external resistor to determine Ipol)
pin 13: T IN C M : O : Analog output. Terrestrial ADC Internal Common-Mode output for bypassing
pin 14: IF 2 TA P : IN : Analog input. Terrestrial 2nd IF Differential Input - Positive
pin 15: IF 2 TA N : IN : Analog input. Terrestrial 2nd IF Differential Input - Negative
pin 16: TV CMO : - : Analog terminal. Terrestrial ADC Internal Common Mode (filtered)
pin 17: A VDD : - : 2.5V Analog Positive Supply Voltage
pin 18: A GND : - : Analog Ground
pin 19: SV CMO : - : Analog terminal. Satellite ADC Internal Common Mode (filtered)
pin 20: IF 2 SA N : IN : Analog input. Satellite 2nd IF Differential Input - Negative
pin 21: IF 2 SA P : IN : Analog input. Satellite 2nd IF Differential Input - Positive
pin 22: S IN CM : O : Analog output Satellite ADC Internal Common-Mode output for bypassing
pin 23: S ADCref : - : Analog terminal. Satellite ADC Reference Adjust (external resistor to determine Ipol)
pin 24: Sref P : - : Satellite ADC Reference Positive Voltage
pin 25: Sref M : - : Satellite ADC Reference Negative Voltage
pin 26: A VDD : - : 2.5V Analog Positive Supply Voltage
pin 27: A GND : - : Analog Ground
pin 28: M Reset : IN : Master reset
pin 29: T AGC : O : Terrestrial AGC Control Signal
pin 30: S AGC : O : Satellite AGC Control Signal
pin 31: VSS : - : Digital Ground
pin 32: XTO : O : XTAL Output
pin 33: M CLK / XTI : IN : XTAL Input or Master Clock Input
pin 34: ADC SEL : IN : Selection between Internal or External ADC 0=Internal
pin 35: M CLK O : O : Master Clock Output
pin 36: M CLK O N : O : Inverted Master Clock Output
pin 37: LOCK S 1 : O : Satellite Dem1 Lock Indicator
pin 38: LOCK S 2 : O : Satellite Dem2 Lock Indicator
pin 39: VDD 3 : - : 3.3V Positive Supply Voltage
pin 40: VDD : - : 2.5V Positive Supply Voltage
pin 41: VSS : - : Digital Ground
pin 42: IF 2 TD 9 : IN : Terrestrial 2nd IF Digital Input
pin 43: IF 2 TD 8 : IN : Terrestrial 2nd IF Digital Input
pin 44: IF 2 TD 7 : IN : Terrestrial 2nd IF Digital Input
pin 45: IF 2 TD 6 : IN : Terrestrial 2nd IF Digital Input
pin 46: IF 2 TD 5 : IN : Terrestrial 2nd IF Digital Input
pin 47: IF 2 TD 4 : IN : Terrestrial 2nd IF Digital Input
pin 48: IF 2 TD 3 : IN : Terrestrial 2nd IF Digital Input
pin 49: IF 2 TD 2 : IN : Terrestrial 2nd IF Digital Input
pin 50: IF 2 TD 1 : IN : Terrestrial 2nd IF Digital Input
pin 51: IF 2 TD 0 : IN : Terrestrial 2nd IF Digital Input
pin 52: F TEST EN : IN : Functional Test Enable (1=enable)
pin 53: INTR : O : Interrupt
pin 54: VSS : - : Digital Ground
pin 55: VDD : - : 2.5V Positive Supply Voltage
pin 56: CLK D : O : Divided Master Clock
pin 57: NC : - : Not Connected. Reserved for Future Use.
pin 58: IF 2 SD 7 : IN : Satellite 2nd IF Digital Input
pin 59: IF 2 SD 6 : IN : Satellite 2nd IF Digital Input
pin 60: IF 2 SD 5 : IN : Satellite 2nd IF Digital Input
pin 61: IF 2 SD 4 : IN : Satellite 2nd IF Digital Input
pin 62: IF 2 SD 3 : IN : Satellite 2nd IF Digital Input
pin 63: IF 2 SD 2 : IN : Satellite 2nd IF Digital Input
pin 64: IF 2 SD 1 : IN : Satellite 2nd IF Digital Input

pin 65: IF 2 SD 0 : IN : Satellite 2nd IF Digital Input
pin 66: VDD 3 : - : 3.3V Positive Supply Voltage
pin 67: VDD : - : 2.5V Positive Supply Voltage
pin 68: VSS : - : Digital Ground
pin 69: S CL : IN : IIC-bus Serial Clock
pin 70: S DA :I/O: IIC-bus Serial Data
pin 71: TEST EN : IN : ATPG Test Enable (1=Enabled)
pin 72: SCAN EN : IN : Scan Enable (1=Enabled)
pin 73: BIST EN : IN : RAM Bilt In Self Test Enable (1=Enabled)
pin 74: PC TS EF 2 : O : Payload Channel TSCC Synch2/Error Flag 2
pin 75: PC FS 2 : O : Payload Channel Frame Sync 2
pin 76: PC SD 2 : O : Payload Channel Serial Data 2
pin 77: PC DC 2 : O : Payload Channel Data Clock 2
pin 78: PC BS 2 : O : Payload Channel Byte Synch 2 (RS Symbol)
pin 79: PC TS EF 1 : O : Payload Channel TSCC Synch1/ ErrorFlag1
pin 80: VDD : - : 2.5V Positive Supply Voltage
pin 81: VDD 3 : - : 3.3V Positive Supply Voltage
pin 82: PC FS 1 : O : Payload Channel Frame Sync 1
pin 83: PC SD 1 : O : Payload Channel Serial Data 1
pin 84: VSS : - : Digital Ground
pin 85: PC DC 1 : O : Payload Channel Data Clock 1
pin 86: PC BS 1 : O : Payload Channel Byte Synch 1 (RS Symbol)
pin 87: NC : - : Not Connected. Reserved for Future Use.
pin 88: NC : - : Not Connected. Reserved for Future Use.
pin 89: NC : - : Not Connected. Reserved for Future Use.
pin 90: VSS : - : Digital Ground
pin 91: VDD : - : 2.5V Positive Supply Voltage
pin 92: NC : - : Not Connected. Reserved for Future Use.
pin 93: NC : - : Not Connected. Reserved for Future Use.
pin 94: NC : - : Not Connected. Reserved for Future Use.
pin 95: M ADD 0 : O : External Memory Address
pin 96: M ADD 1 : O : External Memory Address
pin 97: M ADD 2 : O : External Memory Address
pin 98: M ADD 3 : O : External Memory Address
pin 99: M ADD 4 : O : External Memory Address
pin100: M ADD 5 : O : External Memory Address
pin101: VSS : - : Digital Ground
pin102: VDD 3 : - : 3.3V Positive Supply Voltage
pin103: M ADD 6 : O : External Memory Address
pin104: M ADD 7 : O : External Memory Address
pin105: M ADD 8 : O : External Memory Address
pin106: M ADD 9 : O : External Memory Address
pin107: VSS : - : Digital Ground
pin108: MFP CLK : O : TDM Master Frame Clock
pin109: M ADD 10 : O : External Memory Address
pin110: M ADD 11 : O : External Memory Address
pin111: M BS 0 : O : External Memory Block Selection
pin112: M BS 1 : O : External Memory Block Selection
pin113: M CK E : O : External Memory Clock Enable
pin114: VSS : - : Digital Ground
pin115: VDD : - : 2.5V Positive Supply Voltage
pin116: VDD 3 : - : 3.3V Positive Supply Voltage
pin117: M CS 0 : O : External Memory Chip Select
pin118: M CS 1 : O : External Memory Chip Select
pin119: M DQ M : O : External Memory Data Mask
pin120: M DQ 0 :I/O: External Memory Data Input Output
pin121: M DQ 1 :I/O: External Memory Data Input Output
pin122: M DQ 2 :I/O: External Memory Data Input Output
pin123: M DQ 3 :I/O: External Memory Data Input Output
pin124: M DQ 4 :I/O: External Memory Data Input Output
pin125: M DQ 5 :I/O: External Memory Data Input Output
pin126: M DQ 6 :I/O: External Memory Data Input Output
pin127: M DQ 7 :I/O: External Memory Data Input Output
pin128: VSS : - : Digital Ground
pin129: VDD : - : 2.5V Positive Supply Voltage
pin130: RAS : O : External Memory Row Address Strobe
pin131: CAS : O : External Memory Column Address Strobe
pin132: MWE : O : External Memory Write Enable
pin133: F TEST OUT 0: O : Configurable Functional Test Output
pin134: F TEST OUT 1: O : Configurable Functional Test Output
pin135: F TEST OUT 2: O : Configurable Functional Test Output
pin136: F TEST OUT 3: O : Configurable Functional Test Output
pin137: F TEST OUT 4: O : Configurable Functional Test Output
pin138: VSS : - : Digital Ground
pin139: VDD 3 : - : 3.3V Positive Supply Voltage
pin140: F TEST OUT 5: O : Configurable Functional Test Output
pin141: F TEST OUT 6: O : Configurable Functional Test Output
pin142: F TEST OUT 7: O : Configurable Functional Test Output
pin143: F TEST OUT 8: O : Configurable Functional Test Output
pin144: F TEST OUT 9: O : Configurable Functional Test Output



051-6391-00 STA450 SERVICE LAYER & SOURCE DECODER

DESCRIPTION

The STA450 is designed for digital radio receivers, and integrates all the functions needed to perform the Service Layer and Source Decoding:

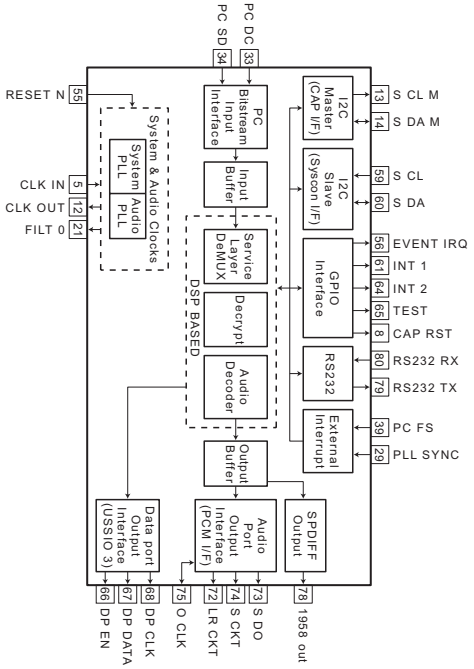
. Bitstream Synchronization
. Service Layer (SL) Demultiplexing
. Auxiliary Data Management
. Conditional Access (CA) Control
. Service Components Extraction
. Service Components Decryption
. Audio and Voice Decoding

The extracted Audio and Data are made available through different interfaces:

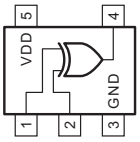
. I2S Audio Output
. S/PDIF Output
. Data Port

Terminal Description

pin 1: NU : IN : Not Used (must be connected to ground in functional mode)
pin 2: GND : - : Ground.
pin 3: VDD : - : 2.5V Core Supply Voltage
pin 4: TEST 0 : IN : Test Pin (must be connected to ground in functional mode)
pin 5: CLK IN : IN : Clock Input
pin 6: NU : IN : Not Used (must be connected to ground in functional mode)
pin 7: TEST B : IN : Test Pin
pin 8: CAP RST : O : CAP Reset
pin 9: GND : - : Ground.
pin 10: VDD : - : 2.5V Core Supply Voltage
pin 11: VDD IO : - : 3.3V I/O Supply Voltage
pin 12: CLK OUT : O : Clock Out
pin 13: S CL M : O : I2C Master Serial Clock
pin 14: S DA M :I/O: I2C Master Serial Data
pin 15: GND : - : Ground.
pin 16: VDD : - : 2.5V Core Supply Voltage
pin 17: NU : IN : Not Used (must be connected to ground in functional mode)
pin 18: SCAN MODE : IN : Scan Mode (must be connected to ground in functional mode)
pin 19: A PLL GND : - : Analog Ground for Audio PLL
pin 20: A PLL VDD : - : 2.5V Analog Supply for Audio PLL
pin 21: FILT 0 : - : PLL Filter
pin 22: NU : - : Not Used (must be terminated with the same network as pin 21)
pin 23: GND : - : Ground.
pin 24: VDD : - : 2.5V Core Supply Voltage
pin 25: CLK M 1 : IN : Selection of Input Clock for the DSP core and peripherals
pin 26: CLK M 0 : IN : Selection of Input Clock for the DSP core and peripherals
pin 27: NU : IN : Not Used (must be connected to ground in functional mode)
pin 28: NU : IN : Not Used (must be connected to ground in functional mode)
pin 29: PLL SYNC : IN : Fractional Audio PLL Sync.
pin 30: GND : - : Ground.
pin 31: VDD : - : 2.5V Core Supply Voltage
pin 32: VDD IO : - : 3.3V I/O Supply Voltage
pin 33: PC DC : IN : PC Bitstream Data Clock
pin 34: PC SD : IN : PC Bitstream Serial Data
pin 35: NU : IN : Not Used (must be connected to ground in functional mode)
pin 36: NU : O : Not used
pin 37: GND : - : Ground.
pin 38: VDD : - : 2.5V Core Supply Voltage
pin 39: PC FS : IN : PC Bitstream PRC Frame Sync.
pin 40: NU : IN : Not Used (must be connected to ground in functional mode)
pin 41: NU : IN : Not Used (must be connected to ground in functional mode)
pin 42: NU : IN : Not Used (must be connected to ground in functional mode)
pin 43: NU : IN : Not Used (must be connected to ground in functional mode)
pin 44: GND : - : Ground.
pin 45: VDD : - : 2.5V Core Supply Voltage
pin 46: NU : IN : Not Used (must be connected to ground in functional mode)
pin 47: NU : IN : Not Used (must be connected to ground in functional mode)
pin 48: NU : IN : Not Used (must be connected to ground in functional mode)
pin 49: NU : IN : Not Used (must be connected to ground in functional mode)
pin 50: GND : - : Ground.
pin 51: VDD : - : 2.5V Core Supply Voltage
pin 52: VDD IO : - : 3.3V I/O Supply Voltage
pin 53: NU : IN : Not Used (must be connected to ground in functional mode)
pin 54: TEST 1 : IN : Test Pin
pin 55: RESET N : IN : HW Reset (active low)
pin 56: EVENT IRQ : O : General Interrupt (Events, Errors, Data ready)
pin 57: GND : - : Ground.
pin 58: VDD : - : 2.5V Core Supply Voltage
pin 59: S CL : IN : I2C Slave Serial Clock
pin 60: S DA :I/O: I2C Slave Serial Data
pin 61: INT 1 : O : Dedicated Errors Interrupt
pin 62: GND : - : Ground.
pin 63: VDD : - : 2.5V Core Supply Voltage
pin 64: INT 2 : O : Dedicated Errors Interrupt
pin 65: TEST : O : Test Pin
pin 66: DP EN : O : Data Port Enable
pin 67: DP DATA : O : Data Port Data
pin 68: DP CLK : O : Data Port Clock
pin 69: GND : - : Ground.
pin 70: VDD : - : 2.5V Core Supply Voltage
pin 71: VDD IO : - : 3.3V I/O Supply Voltage
pin 72: LR CKT : O : I2S Left & Right Clock
pin 73: S DO : O : I2S Output Data (PCM Data)
pin 74: S CKT : O : I2S Serial Clock
pin 75: O CLK :I/O: Oversampling Clock
pin 76: GND : - : Ground.
pin 77: VDD : - : 2.5V Core Supply Voltage
pin 78: 1958 OUT : O : S/PDIF Output
pin 79: RS232 TX : O : RS232 Transmitter
pin 80: RS232 RX : IN : RS232 Receiver (must be connected to ground in functional mode)



051-7278-08 SN74AHC1G86DCKR Single Exclusive OR Gate



051-9327-00 K4S280832E-TC75 4M x 8bit x 4banks SDRAM

Terminal Description

pin 1:	VDD	: - :	Positive voltage supply.
pin 2:	DQ 0	:I/O:	The data input / output.
pin 3:	VDD Q	: - :	Positive power supply for the data I/O ports.
pin 4:	NU	: - :	Not in use.
pin 5:	DQ 1	:I/O:	The data input / output.
pin 6:	VSS Q	: - :	Ground terminal for the data I/O ports.
pin 7:	NU	: - :	Not in use.
pin 8:	DQ 2	:I/O:	The data input / output.
pin 9:	VDD Q	: - :	Positive power supply for the data I/O ports.
pin 10:	NU	: - :	Not in use.
pin 11:	DQ 3	:I/O:	The data input / output.
pin 12:	VSS Q	: - :	Ground terminal for the data I/O ports.
pin 13:	NU	: - :	Not in use.
pin 14:	VDD	: - :	Positive voltage supply.
pin 15:	NU	: - :	Not in use.
pin 16:	WE	: IN :	Write enable signal input.
pin 17:	CAS	: IN :	Column address strobe input.
pin 18:	RAS	: IN :	Raw address strobe input.
pin 19:	CS IN	: IN :	The chip select command input.
pin 20:	BA 0	: IN :	Bank address input.
pin 21:	BA 1	: IN :	Bank address input.
pin 22:	A 10	: IN :	Address signal input.
pin 23:	A 0	: IN :	Address signal input.
pin 24:	A 1	: IN :	Address signal input.
pin 25:	A 2	: IN :	Address signal input.
pin 26:	A 3	: IN :	Address signal input.
pin 27:	VDD	: - :	Positive voltage supply.
pin 28:	VSS	: - :	Negative voltage supply.
pin 29:	A 4	: IN :	Address signal input.
pin 30:	A 5	: IN :	Address signal input.
pin 31:	A 6	: IN :	Address signal input.
pin 32:	A 7	: IN :	Address signal input.
pin 33:	A 8	: IN :	Address signal input.
pin 34:	A 9	: IN :	Address signal input.
pin 35:	A 11	: IN :	Address signal input.
pin 36:	NU	: - :	Not in use.
pin 37:	CKE	: IN :	Clock enable signal input.
pin 38:	CLK	: IN :	The clock pulse input.
pin 39:	DQM	: IN :	Makes data output Hi-Z, tSHZ after the clock and masks the output. Blocks data input when DQM active.
pin 40:	NU	: - :	Not in use.
pin 41:	VSS	: - :	Negative voltage supply.
pin 42:	NU	: - :	Not in use.
pin 43:	VDD Q	: - :	Positive power supply for the data I/O ports.
pin 44:	DQ 4	:I/O:	The data input / output.
pin 45:	NU	: - :	Not in use.
pin 46:	VSS Q	: - :	Ground terminal for the data I/O ports.
pin 47:	DQ 5	:I/O:	The data input / output.
pin 48:	NU	: - :	Not in use.
pin 49:	VDD Q	: - :	Positive power supply for the data I/O ports.
pin 50:	DQ 6	:I/O:	The data input / output.
pin 51:	NU	: - :	Not in use.
pin 52:	VSS Q	: - :	Ground terminal for the data I/O ports.
pin 53:	DQ 7	:I/O:	The data input / output.
pin 54:	VSS	: - :	Negative voltage supply.

052-3713-03 M30624FGMFP System Controller

[NOTE] 052-3713-03 is the performance improvement IC of 052-3713-02, 052-3713-01 and 052-3713-00.

Please use 052-3713-03 in the case of repair.

Terminal Description

pin 1:	PW NET	: O :	ON signal output to the power supply section for NDS.
pin 2:	PW SDR	: O :	ON signal output to the power supply section for SDR.
pin 3:	NU	: - :	Not in use.
pin 4:	NU	: - :	Not in use.
pin 5:	NU	: - :	Not in use.
pin 6:	NU	: - :	Not in use.
pin 7:	AUDIO SW	: O :	Audio switch ON signal output.
pin 8:	BYTE	: IN :	Connect to the ground.
pin 9:	CN VSS	: IN :	Connect to VSS.
pin 10:	NU	: - :	Not in use.
pin 11:	NU	: - :	Not in use.
pin 12:	RESET	: IN :	Reset signal input.
pin 13:	X OUT	: O :	Crystal connection.
pin 14:	VSS	: - :	Negative supply voltage.
pin 15:	X IN	: IN :	Crystal connection.
pin 16:	VCC	: - :	Positive supply voltage.
pin 17:	PULL UP	: IN :	VCC 3.3V.
pin 18:	SYS ACC	: IN :	ACC detect signal input.
pin 19:	BU DET	: IN :	Backup detection signal input.
pin 20:	NU	: - :	Not in use.
pin 21:	NU	: - :	Not in use.
pin 22:	NU	: - :	Not in use.
pin 23:	NU	: - :	Not in use.
pin 24:	NU	: - :	Not in use.
pin 25:	NU	: - :	Not in use.
pin 26:	NU	: - :	Not in use.
pin 27:	NU	: - :	Not in use.
pin 28:	NDS REQ	: O :	NDS request signal output.
pin 29:	NDS RX	: IN :	NDS serial data input from NDS-A/C.
pin 30:	NDS TX	: O :	NDS serial data output to NDS-A/C.
pin 31:	FLASH TX	: O :	The serial data output for flash memory.
pin 32:	FLASH RX	: IN :	The serial data input for flash memory.
pin 33:	FLASH CLK	: O :	Clock pulse output for flash memory.
pin 34:	NU	: - :	Not in use.
pin 35:	NU	: - :	Not in use.
pin 36:	NU	: - :	Not in use.
pin 37:	NU	: - :	Not in use.
pin 38:	NU	: - :	Not in use.
pin 39:	NU	: - :	Not in use.
pin 40:	NU	: - :	Not in use.
pin 41:	FLASH EPM	: IN :	For flash memory.
pin 42:	NU	: - :	Not in use.
pin 43:	NU	: - :	Not in use.
pin 44:	NU	: - :	Not in use.
pin 45:	NU	: - :	Not in use.
pin 46:	FLASH CE	: IN :	Chip enable signal input for flash memory.
pin 47:	NU	: - :	Not in use.
pin 48:	NU	: - :	Not in use.
pin 49:	NU	: - :	Not in use.
pin 50:	SDR DBG	: IN :	For debug.
pin 51:	NU	: - :	Not in use.
pin 52:	NU	: - :	Not in use.
pin 53:	NU	: - :	Not in use.
pin 54:	NU	: - :	Not in use.
pin 55:	NU	: - :	Not in use.
pin 56:	NU	: - :	Not in use.
pin 57:	NU	: - :	Not in use.
pin 58:	NU	: - :	Not in use.
pin 59:	NU	: - :	Not in use.
pin 60:	NU	: - :	Not in use.
pin 61:	NU	: - :	Not in use.

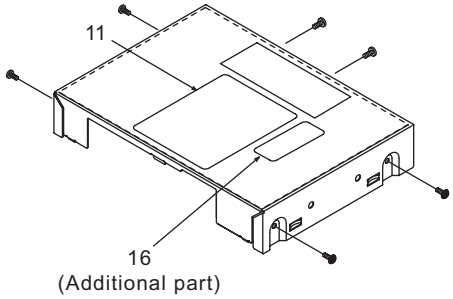
pin 62: NU : - : Not in use.
pin 63: NU : - : Not in use.
pin 64: NU : - : Not in use.
pin 65: NU : - : Not in use.
pin 66: NU : - : Not in use.
pin 67: NU : - : Not in use.
pin 68: NU : - : Not in use.
pin 69: NU : - : Not in use.
pin 70: NU : - : Not in use.
pin 71: ANT DET : IN : The antenna connection flag input.
pin 72: PLL LOCK DET : IN : PLL lock flag input.
pin 73: NU : - : Not in use.
pin 74: SSDEC INT : IN : SSDEC event interrupt.
pin 75: CDEC INT : IN : CDEC interrupt signal input.
pin 76: CDEC RST : O : CDEC reset pulse output.
pin 77: SSDEC RST : O : SSDEC reset pulse output.
pin 78: NU : - : Not in use.
pin 79: I2C DATA : I/O: I2C data input/output.
pin 80: I2C CLK : O : I2C clock pulse output.
pin 81: SPI LE : O : SPI load enable flag output.
pin 82: NU : - : Not in use.
pin 83: SPI DATA : O : SPI data output.
pin 84: NU : - : Not in use.
pin 85: SPI CLK : O : SPI clock pulse output.
pin 86: NU : - : Not in use.
pin 87: DAC CKS : O : Clock pulse output to DAC.
pin 88: NU : - : Not in use.
pin 89: DAC DIF 1 : O : Digital-input-format command output to DAC.
pin 90: NU : - : Not in use.
pin 91: DAC DIF 0 : O : Digital input format.
pin 92: DAC DEM : O : De-emphasis enable output to DAC.
pin 93: NU : - : Not in use.
pin 94: DAC RESET : O : Reset pulse output to DAC.
pin 95: NU : - : Not in use.
pin 96: A VSS : - : Analog ground.
pin 97: NU : - : Not in use.
pin 98: Vref : - : Reference voltage.
pin 99: A VCC : - : Positive supply voltage for the internal analog section.
pin100: NU : - : Not in use.

DIFFERENCE EXPLODED VIEW / PARTS LIST

(Refer to page 3 of the original service manual.)

The following parts are difference parts.

NO.	PART NO.	DESCRIPTION	Q'TY
11	286-6111-05	SETPLATE	1
16	----------	LABEL (SOFTWARE VERSION CODE) (ADDITIONAL PART)	1



(Additional part)

DIFFERENCE ELECTRICAL PARTS LIST

Main PWB(B1) section

(Refer to page 4, 5 of the original service manual.)

The following parts are difference parts.

REF No.	PART No.	DESCRIPTION
C402	189-4773-31	16V470uF
C416	189-4773-22	10V470uF
C423	189-2273-22	10V220uF

REF No.	PART No.	DESCRIPTION
C425	189-2273-22	10V220uF
C440	189-2273-22	10V220uF
C441	189-2273-22	10V220uF

REF No.	PART No.	DESCRIPTION
IC307	052-3713-03	M30624FGMFP

The following parts are removal parts.

REF No.	PART No.	DESCRIPTION
C296	166-1011-50	100pF CH
C297	166-1011-50	100pF CH

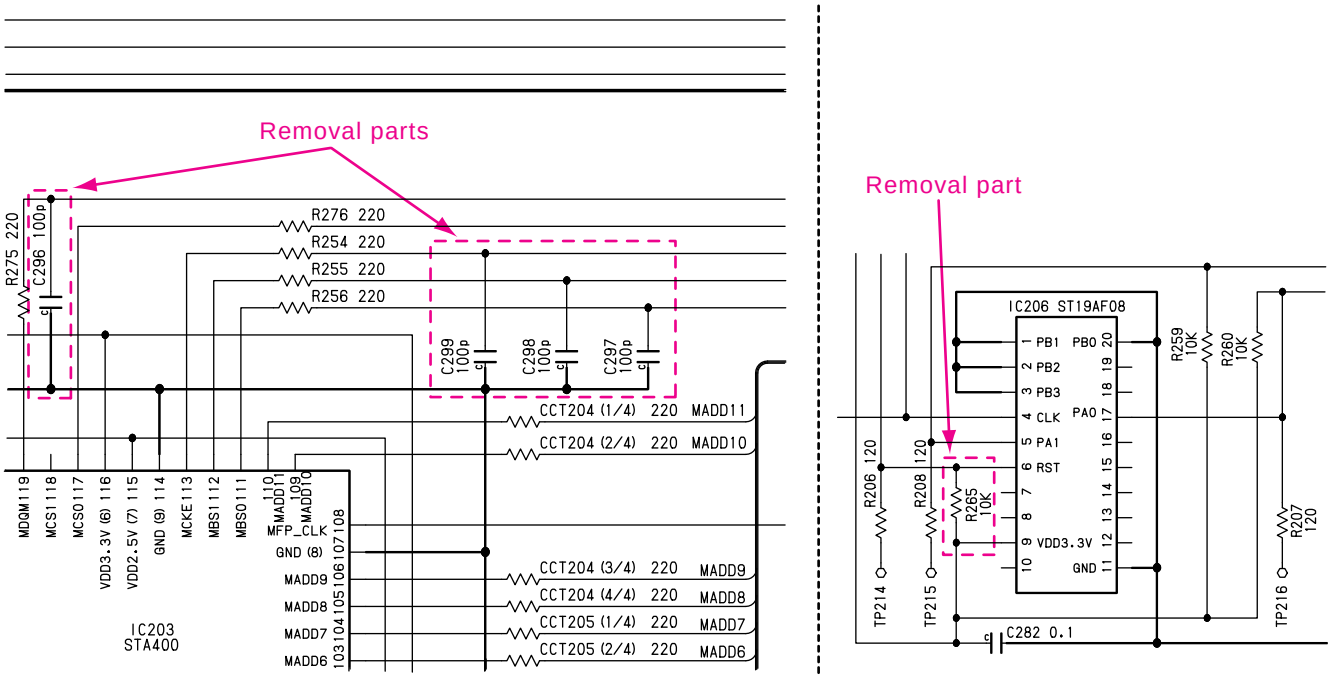
REF No.	PART No.	DESCRIPTION
C298	166-1011-50	100pF CH
C299	166-1011-50	100pF CH

REF No.	PART No.	DESCRIPTION
R265	119-1031-15	1/16W 10k ohm

DIFFERENCE CIRCUIT DIAGRAM

Main PWB(B1) section 2/5

(Refer to page 7 of the original service manual.)



PRINTED WIRING BOARD

Main PWB(B1) section

(Refer to page 10 of the original service manual.)